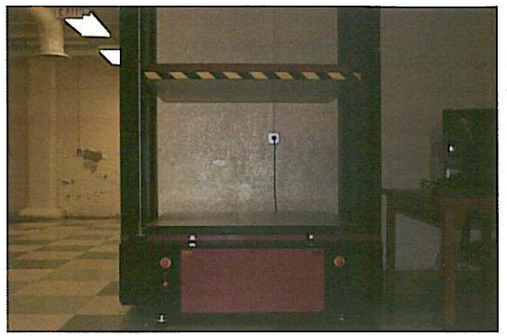
Quality Inspections and Testing

First Article Test Facility QA Measurement Equipment and Capabilities:

- Coordinate Measuring Machine
- Granite Inspection Table
- Hardness Tester
- Optical Comparator
- Surface Profilometer
- Calipers/Micrometers/Gaging for checking standard (lengths, diameters, radii, threads) and geometric dimensioned features (angularity, concentricity, circularity, cylindricity, flatness, parallelism, perpendicularity, position, profile, straightness and runout)
- Reverse Engineering

For More Information Contact the ECBC (RI) Testing Laboratory
Comm: (309) 782-5404
DSN: 793-5404
Fax: (309) 782-1919

Compression Tester



The Compression Tester is used to subject test items to a compressive load force up to 50,000 N (11,240-lbf). The tester has four modes of operation: Constant Force, Constant Rate, Cyclical Constant Force or Cyclical Constant Rate. The Constant Force modes allow for a timed application of a defined compressive load (repetitively for Cyclical Mode). The Constant Rate modes allow for the application of a load force at a constant rate of travel up to 9-inches/minute until a defined percentage drop of load is realized (repetitively to a defined extension limit for Cyclical).

This machine conducts tests to both national and international standards such as ASTM, UN, UNE, UNI AFNOR, DIN, SCAN ISO and TAPPI.

Other RIA Testing Capabilities

- Alloy Identification
- Organic Materials
- Hazardous Waste
- Plating Baths
- RCRA Metals - TCLP, Total
- Coating Identification
- Viscosity Measurements
- Particulate Contamination
- Corrosion Studies
- Wear Tests
- Case Depth
- Tensile/Compression
- Impact/Toughness
- Magnetic Particle
- Failure Analysis / Fatigue Testing
- Accelerated Aging
- Ozone Resistance
- Low/High Temperature Properties
- Specific Gravity
- Abrasion Resistance
- Swipe Testing - Alpha, Beta, Isotopes
- Sealed Source Leak Testing
- Liquid Scintillation Counting
- Flow Proportional Counting
- Optical Emission Spectrometer
- Fourier Transform Infrared
- Inductively Coupled Plasma Spectrometer
- Atomic Absorption Spectrometer
- Gas Chromatograph
- Ion Chromatograph
- Carbon/Sulfur Analyzers
- Gas Analyzers
- Un-Visible Spectrometer
- X-Ray Analyzer
- Metallographs
- Wear Testers
- Salt Spray Cabinet
- Ozone Chamber
- Humidity Chambers
- Magnetic Particle Inspection
- Weld Bend Tester

ECBC (RI) TESTING LABORATORY

RDECOM
Technology to the Warfighter Quicker

U.S. Army
Edgewood Chemical Biological Center Rock Island, Illinois
ECBC (RI)

Introduction

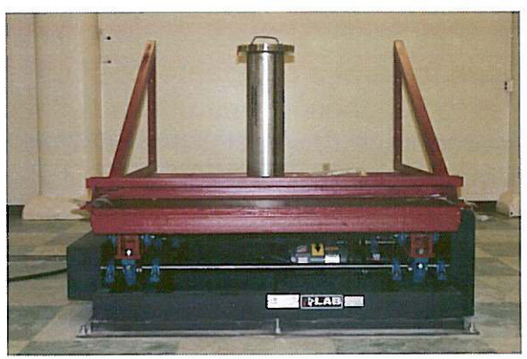
The Edgewood Chemical & Biological Center at Rock Island Test Facility is a state of the art transportation test facility capable of simulating all forms of air and surface transport through the use of three distinctively different vibration systems. This facility tests containers, components and packages to the customers specifications such as UN POP, Title 49, ASTM, MIL STD, ISTA, ISO, FED and DOT test requirements for the transportation of hazardous materials. This lab also does prototype, first article, and pre- and post-production testing such as recertification inspection and testing of containers used in transport of lethal chemical agents. Also located within this facility is a QA laboratory to meet all the customers inspection requirements such as First Article and production inspections.

High Frequency Vibration

The primary use of the high frequency vibration table is to simulate air transport of packages, components, and parts. This system is capable of reproducing vibration environments in the range of 0 to 3000 Hz, up to 50G acceleration, and +/- 1 inch displacements. Although the primary use of this system is to reproduce aircraft transportation environments, the high frequency vibration table can be used to reproduce any vibration environment that falls within the system limits. Through the use of a programmable digital controller, this system has the capability of generating sine, random, sine-on-random, and random-on-random vibration profiles. When used in conjunction with the Russells environmental chamber, items can be tested from -100°F to +340°F.

Low Frequency Vibration

Low Frequency Vibration Tests are used to evaluate the damage potential of the vibrations imposed upon a package during ground transportation. This piece of equipment is ideal for conformance to Title 49 CFR, ASTM, UN-POP, ISTA, ISO, FED and DOT test specifications. This rotary (synchronous) motion test equipment has a 1-inch displacement (+/- 1/2-inch), variable frequency adjustment from 2 to 5 Hz (0.20 to 1.25 Gs), and a load capacity of 1000-pounds. When combined with the BEMCO environmental chamber, test items can be tested from -60°F to +250°.



Multiple Axis Simulation Table (MAST)

The MAST is used to subject a test item to a transportation environment either through the reproduction of a measured test environment or the creation of a random or swept-sine simulated environment. Items up to 1,000 pounds can be subjected to environments up to 10Gs vertical acceleration and 3Gs lateral and longitudinal acceleration at frequencies up to 100Hz. Maximum displacements are limited to +/- 4-inches vertical and +/- 5-inches lateral and longitudinal. Maximum angle of tilt is +/- 7-degrees. Maximum velocity is limited to 50-inches/second vertical and 64-inches/second lateral and longitudinal.